IN THE CLAIMS

Complete listing of the claims:

1. (Currently amended) A method for securely communicating information, comprising:

optically encrypting said information and storing the resulting encrypted data;

reading out the encrypted data in ~~the~~ a spatial domain;

sampling the encrypted data in the spatial domain to avoid overlap in the spatial domain between adjacent data at a receiving end;

converting said encrypted data to ~~the~~ a temporal domain;

transmitting the converted encrypted data;

receiving the transmitted encrypted data and converting the received encrypted data to the spatial domain; and

decrypting the converted received encrypted data to reconstruct said information~~; and~~

~~thresholding the resulting decrypted, reconstructed information to recover data lost due to sampling the encrypted data~~.

2. (Previously presented) The method as defined by claim 1, wherein said reading out the encrypted data in the spatial domain and converting the encrypted data to the temporal domain are implemented using ultrafast laser pulses.

3. (Previously presented) The method as defined by claim 1, wherein said reading out the encrypted data in the spatial domain and converting the encrypted data to the temporal

domain are implemented using ultrafast laser pulses spread in the spatial domain according to their spectral components.

4. (Original) The method as defined by claim 3, wherein said ultrafast pulses are spread in the spatial domain by diffraction.

5. (Previously presented) The method as defined by claim 1, wherein said transmitting the converted data comprises transmitting said converted data over an optical network.

6. (Previously presented) The method as defined by claim 1, wherein said converting received encrypted data to the spatial domain is implemented using ultrafast laser pulses.

7. (Previously presented) The method as defined by claim 1, wherein said optical encryption includes random phase encryption.

8. (Previously presented) The method as defined by claim 2, wherein said optical encryption includes double random phase encryption.

9. (Original) The method as defined by claim 8, wherein said double random phase encryption includes phase encryption in the spatial domain and phase encryption in the frequency domain.

10. (Previously presented) The method as defined by claim 1, wherein said storing of encrypted data comprises holographically storing said encrypted data.

11. (Previously presented) The method as defined by claim 1, wherein said reading out and converting said encrypted data comprises:

forming a real-time hologram using read-out encrypted data and a reference beam;

reading out the real-time hologram; and

converting the read-out hologram from the spatial domain to the temporal domain.

12. (Previously presented) The method as defined by claim 11, wherein said reading out the real-time hologram comprises directing a diffracted ultrafast laser pulse at said real time hologram.

13. (Previously presented) The method as defined by claim 5, wherein said reading out and converting said encrypted data comprises:

forming a real-time hologram using read-out encrypted data and a reference beam;

reading out the real-time hologram; and

converting the read-out hologram from the spatial domain to the temporal domain.

14. (Previously presented) The method as defined by claim 13, wherein said reading out the real-time hologram comprises directing a diffracted ultrafast laser pulse at said real time hologram.

15. (Previously presented) The method as defined by claim 1, wherein said decrypting the converted received encrypted data includes phase decoding of said converted received encrypted data.

16. (Previously presented) The method as defined by claim 1, wherein said decrypting the converted received encrypted data includes phase decoding of said converted received encrypted data in the spatial domain and in the frequency domain.

17-25. (Canceled)

26. (Currently amended) Apparatus for securely communicating information, comprising:

means for optically encrypting said information and storing the resulting encrypted data;

means for reading out the encrypted data in ~~the~~ a spatial domain;

means for sampling the encrypted data in the spatial domain to avoid overlap in the spatial domain between adjacent data at a receiving end;

means for converting said encrypted data to ~~the~~ a temporal domain;

means for transmitting the converted encrypted data;

means for receiving the transmitted encrypted data and converting the received encrypted data to the spatial domain; and

means for decrypting the converted received encrypted data to reconstruct said information~~; and~~

~~means for thresholding the resulting decrypted, reconstructed information to recover data lost due to sampling the encrypted data~~.

27. (Previously presented) Apparatus as defined by claim 26, wherein said means for receiving the transmitted encrypted data and means for converting the received encrypted data to the spatial domain include diffracted ultrafast laser pulses.

28. (Previously presented) Apparatus as defined by claim 26, wherein said means for optically encrypting includes means for implementing double random phase encryption.

29-30. (Cancelled)

31. (Currently amended) A method for securely communicating information, wherein the information is stored encrypted data, the method comprising:

reading out the encrypted data in ~~the~~ a spatial domain;

sampling the encrypted data in the spatial domain to avoid overlap in the spatial domain between adjacent data at a receiving end;

converting said encrypted data to ~~the~~ a temporal domain;

transmitting the converted encrypted data;

receiving the transmitted encrypted data and converting the received encrypted data to the spatial domain; and

decrypting the converted received encrypted data to reconstruct said information; and

thresholding the resulting decrypted, reconstructed information to recover data lost due to sampling the encrypted data.

32. (Previously presented) The method as defined by claim 31, wherein said reading out the encrypted data in the spatial domain and converting the encrypted data to the temporal domain is implemented using ultrafast laser pulses.

33. (Previously presented) The method as defined by claim 31, wherein said reading out the encrypted data in the spatial domain and converting the encrypted data to the temporal domain is implemented using ultrafast laser pulses spread in the spatial domain according to its spectral components.

34. (Previously presented) The method as defined by claim 31, wherein said stored encrypted data comprises holographically stored encrypted data, and wherein said reading out and converting said encrypted data include:

forming a real-time hologram using read-out encrypted data and a reference beam;

reading out the real-time hologram; and

converting the read-out hologram from the spatial domain to the temporal domain.

35. (Previously presented) The method as defined by claim 34, wherein said reading out the real-time hologram comprises directing a diffracted ultrafast laser pulse at said real time hologram.